



forest management note

Note No. 42

Northern Forestry Centre

Edmonton, Alberta

COMMON INSECTS ATTACKING POPLAR STOOLING BEDS IN THE PRAIRIE PROVINCES

Poplars are used extensively for ornamental and shelterbelt plantings in Canada's prairie provinces. Within the last 5 years, over 1 500 000 cuttings were produced and shipped to farmers and eligible applicants by Agriculture Canada's Prairie Farm Rehabilitation Administration (PFRA) Tree Nursery in Indian Head, Saskatchewan and by the Alberta Tree Nursery and Horticulture Center of Alberta Agriculture in Oliver, Alberta. The infestation of poplar stooling beds by the willow shoot sawfly, the cottonwood crown borer, and the cottonwood leaf beetle have greatly reduced the availability of cuttings for distribution. The purpose of this report is to describe these insects so that nursery personnel can recognize these pests, to describe the life histories of these insects and the damage they cause, and to indicate current methods of control.

WILLOW SHOOT SAWFLY

Janus abbreviatus (Say)

The willow shoot sawfly is present from Nova Scotia to Alberta in Canada and south to Virginia and Arkansas in the United States. Its hosts are primarily willow and poplar.

Life History

The adults (Fig. 1) are wasplike and black in color. Females and males have wingspans of 12-16 and 10-12 mm. Using her ovipositor, the female girdles the tender shoots with a series of punctures above where she has deposited a single translucent-to-white egg. The eggs hatch in 7 to 10 days. The S-shaped larvae (Fig. 2)

measure 8-11 mm in length when mature and have a slightly enlarged thorax. They tunnel down the shoot, causing shoot mortality (Fig. 3). The mature larvae overwinter in brownish cocoons constructed in the tunnel. Pupation occurs in spring, and adults emerge a few days later. Emergence generally occurs from May to July, and first attacks occur when the willow or poplar shoots are approximately 30-60 mm long. There is usually one generation of these pests annually in the prairie provinces.

Although willow is considered to be the primary host, poplar is also severely damaged because it is a more suitable host for larval development, producing larger larvae and adults. Poplar terminal shoots are occasionally killed, but most attacks are confined to the smaller, lateral shoots.

Control

Natural enemies such as parasites, predators, and fungi have reduced infestation levels. Infestations can be reduced by pruning and destroying infested shoots and by good sanitation practices. There are no insecticides currently registered for control of this insect.

COTTONWOOD CROWN BORER

Sesia tibialis (Harr.)

The cottonwood crown borer is widely distributed across southern Canada and the northern United States. Severe infestations have been reported in the west coast area of North America. This insect attacks the base of trees and the exposed roots of poplar and willow.



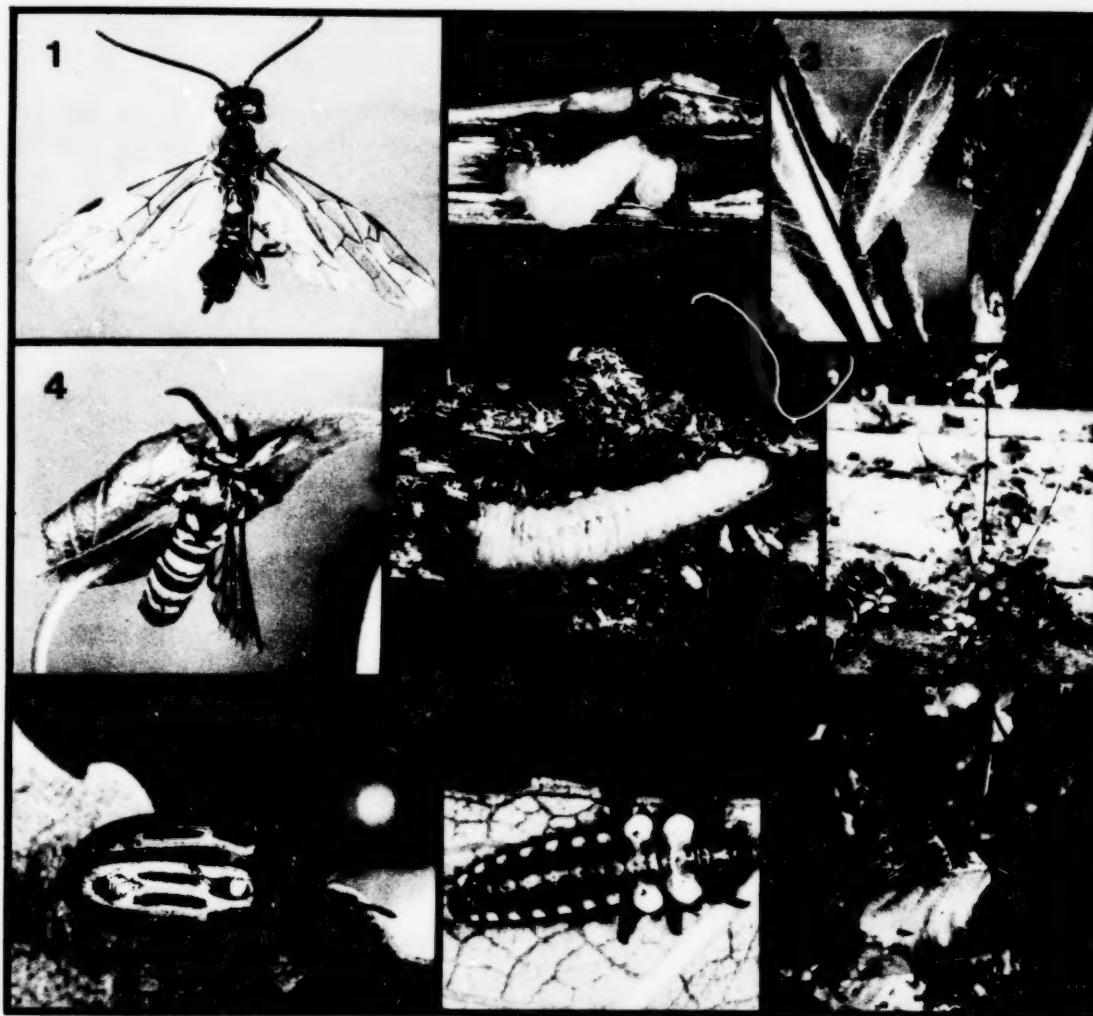
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Figures 1-9: 1. Adult of the willow shoot sawfly, *Janus abbreviatus*. 2. Larva of *J. abbreviatus*. 3. Damage caused by *J. abbreviatus*. 4. Adult of the cottonwood crown borer, *Sesia tibialis*. 5. Larva of *S. tibialis*. 6. Damage caused by *S. tibialis*. 7. Adult of the cottonwood leaf beetle, *Chrysomela scripta*. 8. Larva of *C. scripta*. 9. Larvae of and damage caused by *C. scripta*.

Life History

The adults (Fig. 4) resemble bees and wasps and are known as clearwing moths because parts of their wings are transparent. Females and males have wingspans of 34-38 mm and 30-32 mm. The body is black with narrow yellow bands on the second and fourth abdominal segments. The female deposits her eggs near the tree base on the root stalks. The full-grown larvae (Fig. 5) are naked, white with reddish heads, and measure from 30 to 50 mm in length. They bore into the roots and root-collar area. By excavating extensive tunnels the insects cause swellings to develop. They also often girdle the stump of the parent tree, which leads to mortality in some young trees (Fig. 6). The life cycle generally requires 2 years to complete. Larvae spend the first winter in tunnels within the wood and the second winter in cocoons constructed of wood borings in or close to the tree base or the exposed roots. Pupation takes place in spring, and the adults emerge in June to late August.

Control

The removal and burning of infested root stock helps to reduce the amount of damage. There are no insecticides currently registered for the control of the cottonwood crown borer.

COTTONWOOD LEAF BEETLE

Chrysomela scripta F.

This leaf beetle is found throughout most of Canada and the United States. It feeds on poplar, willow, and alder.

Life History

The adult beetles (Fig. 7) are approximately 6 mm long and have a black head and thorax and yellow or red thoracic margins. Wing covers are yellowish in color with black elongated spots. The adult beetles overwinter under loose bark, debris, or clumps of grass. They appear early in spring and feed on the tender young shoots and leaves of the host plant. The eggs can either be yellowish or reddish in color, and they are deposited in groups of 15-75 on the undersides of leaves. The gregarious young larvae (Fig. 8) are black, and they skeletonize the leaves (Fig. 9). Later they feed separately and consume the entire leaf except for the main veins. When mature, they pupate after attaching themselves to the leaf surfaces, bark, weeds, or grasses. During warm weather, the growth period of the larvae is about 15 days, and several generations can occur in favorable years.

Control

Natural enemies such as predators and parasites help to control the cottonwood leaf beetle. Infestations are often held in check by ladybird beetles, which feed on both its eggs and pupae. If chemical control is necessary, insecticides such as carbaryl, diazinon, malathion, and pyrethrins are registered for use on this insect.

Insecticides can be toxic to humans, animals, birds, and fish. All instructions and precautions listed by the manufacturer should therefore be followed carefully.

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